

REMARKS

Claims 1-4, 8-10, 17, 19 and 24-32 are pending.

Claims 1, 2, 8 and 9 have been amended to incorporate the features previously recited in claims 22, 23, 33 and 34, which have been canceled. In particular, claims 1, 2, 8 and 9 now recite that the first (or shallow) part of the drift region, which is formed below a substantial part of the gate electrode, has a first dopant concentration, and the second (or deep) part of the drift region has a second dopant concentration, wherein the first dopant concentration is higher than the second dopant concentration.

An example of the first and second parts of the drift region are shown in FIG. 1 and are identified by reference numerals 22A, 22B, respectively. The feature of the different concentrations is disclosed, for example, at page 14, lines 6-14 of the pending specification (*see also* FIG. 6 for a particular example).

The pending claims were rejected as follows:

* Claims 1, 2, 8 and 19 were rejected as unpatentable over the combination of U.S. Patent No. 5,907,173 (Kwon et al.) and U.S. Patent No. 5,949,105 (Moslehi).

* Claims 3-4, 9-10, 17, 20-21 and 24-32 were rejected as unpatentable over the combination of the Kwon et al. and Moslehi patents in view of U.S. Patent No. 5,869,371 (Blanchard et al.).

As discussed below, applicant respectfully requests reconsideration.

The Office action relies on the Moslehi patent primarily for its disclosure of a drain region 20, which includes portions 22 and 26 (FIG. 1). As pointed out by the Office action, the elevated drain region 32 (FIG. 1) allegedly corresponds to the claimed "drain region," and the regions 26, 22 may correspond, respectively, to the first and second parts of the claimed "drift region" in pending claim 1.

However, in contrast to claim 1 as amended, the concentration of the shallow region 26 under the gate 42 is lower than the concentration of deep region 22. In particular, as explained

by the Moslehi patent, the region 26 is “lightly doped” (col. 6, lines 55-56), whereas the region 22 is “heavily doped” (col. 5, lines 58-59). That is precisely the opposite of what is recited in pending claim 1, *i.e.*, that the first shallow part of the drift region below a substantial part of the gate electrode has a higher concentration than the second deep part. The Kwon et al. patent also does not disclose or suggest that feature.

The Office action (at page 11) states as follow:

With respect to claims 22, 23, Kwon describes a semiconductor device in accordance with claim 1, wherein the dopant concentration of said first part is higher than that of said second part. (Balnchard [sic.] col. 4 line 54).

That statement initially refers to the Kwon et al. patent, but then confusingly cites to a portion of the Blanchard patent. Furthermore, neither the Kwon et al. patent nor the Blanchard patent discloses anything about relative dopant concentrations in col. 4, line 54. As discussed above, the Kwon et al. patent discloses precisely the opposite relative concentrations compared to the subject matter of claim 1. Moreover, even if there were some disclosure in the Blanchard patent about the relative concentrations, the Office action completely fails to identify any motivation—let alone a “clear and particular” motivation—for modifying the Kwon et al. and Moslehi patents to obtain the claimed subject matter.

At least for those reasons, independent claim 1, as well as the claims that depend from claim 1, should be allowable over the Kwon et al. and Moslehi patents.

Independent claims 2, 8 and 9 also should be allowable at least for the reasons discussed above.

Furthermore, claims 2, 8 and 9 recite additional features which, taken as a whole, are not suggested by the cited references. In particular, there would not have been the kind of “clear and particular” motivation required by the Court of Appeals for the Federal Circuit to combine the disclosures of the cited references as suggested by the Office action. *See, e.g., C.R. Bard, Inc. v. M3 Sys., Inc.*, 157 F.3d 1340, 1352, 48 USPQ2d 1225, 1232 (Fed. Cir. 1998); *Teleflex, Inc. v.*

- *Ficosa North Am. Corp.*, 63 USPQ2d 1374 at 1387 (Fed. Cir. 2002) (showing of motivation to combine must be “clear and particular.”).

For example, as noted above, the Office action relies on the Moslehi patent primarily for its disclosure of a drain region 20, which includes portions 22 and 26 (FIG. 1). The Office action effectively alleges that it would have been obvious to use such a region instead of the n-drift region 23 in FIG. 1 of the Kwon et al. patent. As explained below, that is incorrect.

Claim 2 recites that the two-part drift region is of a second conductivity type, whereas the well region, the body region and the substrate are of a first conductivity type. As shown, for example, in applicant’s FIG. 1 (and FIG. 5B), the substrate 1, the body region 3 and the well 21 are p-type, whereas the drift region 22 is n-type. Claim 2 further recites that the entire first part of the drift region is located below the gate electrode.

FIGS. 1 and 3 of the Kwon et al. patent disclose p-type wells 1, 21. Therefore, the Office action effectively is alleging that, in view of the Moslehi patent, it would have been obvious to shift the n-type drift regions 3, 23 toward the left so that the entire left-hand side of that regions 3, 23 would be located below the respective gates 4, 24. That, however, would have contrary to the express disclosure of the Kwon et al. patent, which states in connection with FIG. 1:

One side edge of the gate electrode 4 is positioned at the boundary between the p-type drift region 2 and the n-type drift region 3.

(Col. 1, lines 54-56) Similar statements are made with respect to FIGS. 2, 3 and 4 (*see* col. 2, lines 11-13; col. 4, line 67 – col. 5, line 3; col. 5, lines 27-31).

In other words, according to the Kwon et al. patent, it is important that the side edge of the gate electrode be located at the boundary between the p- and n-type drift regions. That would not be the case if the drain region 20 of the Moslehi patent were used, or if the n-drift region 3 (or 23) of the Kwon et al. patent were shifted to the left so that the entire left-hand side of the n-drift region were located below the gate 4 (or 24). Similar remarks are applicable to the embodiments of FIGS. 2 and 4 of the Kwon et al. patent in which the n-type and p-type regions and wells are reversed.

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For those additional reasons, claims 2 and 9, as well as the claims that depend from those claims, should be allowable. A contrary conclusion would be precisely the type of improper hindsight that the Federal Circuit has warned against.

It is believed that all of the pending claims have been addressed. However, the absence of a reply to a specific rejection, issue or comment does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper, and the amendment of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment.

Please apply any other charges or credits to deposit account 06-1050.

Respectfully submitted,

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